

Bonneville Power Administration

Fish and Wildlife Program FY99 Proposal Form

How this form is structured

There are ten major sections to this form. Sections 1 through 5 are database-style fields in which specific information is being sought, so your input is restricted to the gray boxes below. *The boxes are pointers to indicate where to type; they will grow as you type more text, and they won't print as gray boxes.* These sections include: General Administrative Information; Key Words; Objectives, Tasks and Schedules; Relationship to Other Bonneville Projects; and Budget.

In Sections 1 through 5, each field is briefly described on the form itself, and for some fields more tips are shown in the status bar (bottom of the screen). For tables where more rows may be needed than are provided, press Alt-R from within the table to add a row at the end.

Sections 6 through 10 accept a narrative format in which more open-ended questions are asked and you may respond at length in paragraph form. Descriptions are provided on the form. These sections include: Abstract, Description, Relationships to Other Projects, Personnel, Information/Technology Transfer.

Steps to complete the form

1. First, read the Guidelines to Proposals.
2. Second, save this form. For ongoing projects, use your project number.DOC (example: 8909900.DOC). For new proposals, use a filename other than BLANK.DOC, preferably, your agency acronym and your initials (example: NMFSWS1.DOC).
3. Press Tab to move to the first field (Title of Project), and start typing.
NOTE: When you exit the Project Title or Project Number fields, your screen may display a "Header" box briefly. The form is updating itself, and will continue normally.
4. Fill in all fields (gray boxes) pressing Tab to advance from one field to the next. Then fill in narrative input areas, pressing down arrow to advance.
5. Print the completed document.
6. Save the document to diskette and mail both paper and diskette to:
Bonneville Power Administration - EW
ATTN: Connie Little
FY99 Proposals
P.O. Box 3621
Portland OR 97208-3621

Call Jim Middaugh at the Northwest Power Planning Council (503) 222-5161 or (800) 222-3355 or email middaugh@nwppc.org if you have additional questions.

Proposals must be received to Bonneville by 5pm PST on Friday, January 23, 1998. Late proposals will not be reviewed for FY99 funding. This information will be the only material submitted for independent scientific review. It is essential that the relevant information be provided completely but concisely.

Section 1. General administrative information

Title of project. 75 characters or less; do not include the contractor name or acronym; use abbreviations if appropriate; start with action verbs, i.e., “Evaluate Coho...”, not “Evaluation of Coho”.

Enhance Habitat For Spring & Fall Chinook, Summer Steelhead, And Bulltrout.

Bonneville project number, if an ongoing project 9401806

Business name of agency, institution or organization requesting funding

Columbia Conservation District

Business acronym (if appropriate) CCD

Proposal contact person or principal investigator:

Name	<u>Terry Bruegman</u>
Mailing Address	<u>202 South Second Street</u>
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Phone	<u>(509)382-4773</u>
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Email address	<u>ccd@bmi.net</u>

Subcontractors. List other agencies or entities that will receive funding under this project, either through sub-contracts managed by the project sponsor or, where multiple agencies are involved as joint sponsors, through primary contracts managed by Bonneville. If another entity will be responsible for the long term maintenance of the project, identify them here.

List one subcontractor per row; to add more rows, press Alt-R from within this table

Organization	Mailing Address	City, ST Zip	Contact Name
N/A			

NPPC Program Measure Number(s) which this project addresses. Refer to 1994 Fish and Wildlife Program as amended in 1995; NPPC staff will proof this field and correct if necessary; separate multiple measure numbers with commas.

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NMFS Biological Opinion Number(s) which this project addresses. If the project relates to the Kootenai Sturgeon Biological Opinion, the NMFS Hydrosystem Operations

Biological Opinion, or other Endangered Species Act requirements, enter the Action Number and Biological Opinion Title.

Endangered Species Act listed species, Snake River Spring Chinook, Snake River Fall Chinook, & Snake River Steelhead

Other planning document references. If the project is called for in the National Marine Fisheries Service *Snake River Salmon Recovery Plan*, or in *Wy Kan Ush Me Wa Kush Wit*, the Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama tribes, in U.S. Forest Service or Bureau of Reclamation land management plans, or in local area subbasin or watershed plans, or in other planning documents, provide the name of the plan and reference citation where the need is identified.

If the project type is “Watershed” (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Tucannon River Model Watershed Plan, Snake River Salmon Recovery Plan, WA Department of Fish and Wildlife Wild Salmonid Policy, Bonneville Power Administration Tucannon Sub-Basin Plan,

Subbasin. List subbasin(s) where work is performed. Use commas to separate multiple subbasins. Coordination projects or those not affecting particular subbasins may omit this field.

Tucannon River, tributary to the Snake

Short description. Describe the project in a short phrase (less than 250 characters). Give information that is not in the title. If possible start this field with an action verb (protect, modify, develop, enhance, etc.) rather than a noun (this project protects). There is room for a more detailed project abstract later in the narrative section, so please keep this answer short.

Enhance fish habitat and water quality utilizing bio-engineering technology and riparian enhancement to reduce stream temperature, turbidity, sedimentation, geomorphic and stream bank instability while increasing pool density and habitat complexity.

Section 2. Key words

For identifying and sorting, mark key words below that most specifically describe this project. Under each heading (Programmatic Categories, Activities, Project Types), find the **one** item that most applies to your project, and mark it with an X in the Mark column. If other items in the same heading also apply, mark them with a plus sign or asterisk.

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction	X	Watershed
+	Resident fish	+	O & M		Biodiversity/genetics
+	Wildlife		Production		Population dynamics

Oceans/estuaries	Research	+	Ecosystems
Climate	+ Monitoring/eval.		Flow/survival
Other	+ Resource mgmt		Fish disease
	Planning/admin.		Supplementation
	Enforcement	+	Wildlife habitat en-
	Acquisitions		hancement/restoration

Other keywords. If there are other key words that would help identify your project, enter them below, separated by commas; example key words: DNA, stock identification, life history, sampling, modeling, nutrient dynamics, predation, hydrodynamics, gas bubble disease, disease names, hatchery-wild interactions, ecological interactions.

Model Watershed Plan, Implementation, Enhancement Project, Technical Lead

Section 3. Relationships to other Bonneville projects

Describe any interdependencies with other projects funded under the Fish and Wildlife Program. Don't include general relationships to other projects, but target those that depend on this project being funded, or vice versa. There is room in Section 7 below to comment on other relationships or to describe these more fully.

If you need more rows, press Alt-R from within this table.

Project #	Project title/description	Nature of relationship
9202602	Implement Eastern Wa Model Watershed Plans	Technical Lead to Implement Plan

Section 4. Objectives, tasks and schedules

This section has three parts: a) Objectives and tasks table, b) Objective schedules and costs table, c) other schedule fields. Instructions for each part follow the headings.

Objectives and tasks

Briefly describe measurable objectives and the tasks needed to complete each objective. Use Column 1 to assign numbers to objectives (for reference in the next table), and Column 3 to assign letters to tasks. Use Columns 2 and 4 for the descriptive text. Objectives do not need to be listed in any particular order, and need only be listed once, even if there are multiple tasks for a single objective. List only one task per row; if you need more rows, press Alt-R from within this table.

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce Stream Tempertures	a	Riparian Enhancement, Tree/Shrub Plantings 8,000 ft

		b	Enhance width/depth ration of stream with installation of habitat structures
		c	In-stream Structures - Refer to Obj. 2 Task a
2	Increase Resting/Rearing Pools with Enhanced Habitat Complexity	a	Installation of pool forming/habitat enhancing structures: vortex rock weirs, rock/log barbs, rootwad revetments, rock veins, LWD placement, meander reconstruction
3	Stream Bank and Geomorphic Stability	a	In-stream Structures - Refer to Obj. 2 Task a
		b	Riparian Enhancement-Refer to Obj. 1 Task a
4	Reduce Sedimentation in Spawning Gravels	a	In-stream Structures - Refer to Obj. 2 Task a
		b	Riparian Enhancement-Refer to Obj. 1 Task a
5	Reduce Fecal Coliform Levels	a	Enhancement of riparian area plantings/modified management

Objective schedules and costs

Partition overhead, administrative, support, and any other common costs shared among objectives. The percentages for all objectives should total 100%. Enter just the objective numbers from Column 1 in the above table. Enter start and end dates for each objective using the mm/yyyy format (e.g. 05/2002 for May, 2002).

If you need more rows, press Alt-R. **Press Alt-C to calculate total.**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	1/1998	12/1998	5.00%
2	1/1998	12/1998	30.00%
3	1/1998	12/1998	30.00%
4	1/1998	12/1998	30.00%
5	1/1998	12/1998	5.00%
			TOTAL 100.00%

Schedule constraints. Identify any constraints that may cause schedule changes.

Describe major milestones if necessary.

Enhancing and maintaining critical salmonid habitat requires cooperation and long-term commitments between landowners and agencies to ensure responsible watershed

management Cooperators need to know that long-term cost-share assistance will be available.

Completion date. Enter the last year that the project is expected to require funding. Due to the changing dynamics of the watershed, cost of habitat enhancement, and limited available funding a completion date of 2005 or later for plan implementation is realistic.

Section 5. Budget

This section has two tables: 1) FY99 budget by line item, and 2) Outyear costs. Instructions for each part follow the heading.

FY99 budget by line item

List FY99 budget amounts for each category. If an item needs more explanation, provide it in the Note column. If the project uses PIT tags, include the cost (\$2.90/tag). **Press Alt-C to calculate total.**

Item	Note	FY99
Personnel	(FY1998 Project Proposals)	
Fringe benefits		
Supplies, materials, non-expendable property		
Operations & maintenance		\$15,500
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs		
Subcontracts	Fish Habitat Implementation Projects	\$174,000
Other	Monitoring & Evaluation Plan	\$3,500
TOTAL		\$193,000

Outyear costs

List budget amounts for the next four years, and the estimated percentage of those costs for operations and maintenance (O&M).

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	\$265,000	\$265,000	\$265,000	\$265,000
O&M as % of total	6.00%	6.00%	6.00%	6.00%

Section 6. Abstract

A condensed description to briefly convey to other fish and wildlife scientists, managers and non-specialists the background, objectives, approach and expected results. **In under 250 words**, include the following:

- a. Specific items in any solicitation being addressed
- b. Overall project goals and objectives
- c. Relevance to the 1994 Columbia Basin Fish and Wildlife Program (benefit to fish and wildlife)
- d. Methods or approach based on sound scientific principles
- e. Expected outcome and time frame
- f. How results will be monitored and evaluated

The Tucannon River Model Watershed Plan will be published following SEPA review in early 1998.

The Plan was developed to identify, protect, and restore fish habitat by utilizing sound technical information and citizen input.

The Plan's habitat enhancement goals are consistent with identified elements in "Strategy For Salmon" and "Wild Salmonid Policy". Plan implementation is guided by Landowner Steering and Technical Advisory Committees, and emphasis habitat enhancement - the only element in salmonid restoration that non-governmental entities can positively impact.

Project and Plan goals/objectives of enhancing salmonid habitat, stream bank and geomorphic stability, reducing stream temperature, reducing sedimentation in spawning gravels, and promoting cooperation and agreement between landowners and resource agencies for salmonid habitat enhancement are supportive of various restoration plans goals/objectives

Project implementation is relevant to the 1994 Columbia Fish and Wildlife Program in that specific problems were identified during the planning assessment. Individual, on site, project assessments with an Inter-Disciplinary Team identified corrective actions that will effectively enhance habitat for ESA listed weak populations without adversely effecting biological diversity, while emphasizing total watershed health.

Drawing on their expertise and resources, the Technical Advisory Committee, and WDFW and NRCS staff identified methods utilized for habitat enhancement.

Monitoring/evaluation of project effectiveness, critical for adaptive management, will be accomplished cooperatively by watershed Technical Lead, WDFW, NRCS, and USFS staff.

The goals of implementing projects and obtaining data that will identify benefits and deficiencies to guide future enhancement activities is attainable by 2005.

Section 7. Project description

This full description of the project should be in sufficient detail to include the following information under headings a through g (**maximum of 10 pages for entire project description**):

a. Technical and/or scientific background. The overall problem should be clearly identified with background history and scientific literature review, if a research project. Location should be specific, if relevant. Goals and objectives of the 1994 Fish and Wildlife Program (FWP), NMFS Biological Opinion, or other plans in relation to the proposed project should be stated and described in some detail. Indicate whether the project mitigates losses in place, in kind, or if out-of-kind mitigation is being proposed.

Show how the proposed work is a logical component of an overall conceptual framework or model that integrated knowledge of the problem. The most significant previous work history related to the project, including work of key project personnel on any past or current work similar to the proposal, should be reviewed. All work should be adequately referenced and listed at the end of this field.

In 1992, the Washington State Conservation Commission entered into a contract with Bonneville Power Administration(BPA) for the development and implementation of three Model Watershed Plans in SE Washington. In 1993 the Tucannon River Model Watershed was selected as one of the three. This project proposal is specific to the Tucannon River Model Watershed.

The Tucannon River is currently home to ESA listed stocks of Spring Chinook Salmon, Fall Chinook Salmon, Steelhead, as well as, pending listing of Bulltrout. The impacts of human activities and catastrophic natural events such as floods, droughts, and fires on these critical listed stocks and the Columbia Conservation District's ability to involve landowner cooperation to implement on the ground solutions for enhanced fish and watershed habitat health facilitated their selection.

During Plan preparation and watershed assessment the Watershed Technical Lead, Landowner Steering and Technical Advisory Committees made extensive use and comparison of existing literature and assessed watershed conditions as cited in the Watershed Plan on in-stream fish habitat, historical water quality and fish data, technical reports from state and federal natural resource agencies and personal communications with local residents intimately familiar with the watershed.

The problems identified through this effort were high stream temperature, high bacteria levels, high turbidity during periods of rain and snow melt, high levels of sediment in spawning gravels, low number of large rearing and resting pools with cover, and stream bank and geomorphic instability. The Goals jointly established by the Landowner Steering and Technical Advisory Committees to guide the development of the plan and identify

corrective actions required to address the problems were; improve in-stream fish habitat quality and quantity, restore and maintain natural stream stability to reduce adverse effects of floods and benefit fish and wildlife resources as well as private and public resources, promote cooperation and agreement between landowners and resource agencies in decision making for resource use and fish and wildlife habitat improvement, reduce water temperature, reduce upland erosion and sedimentation rates to decrease the percentage of fines in spawning gravels, improve and re-establish riparian vegetation, utilize cost-effective ways to treat identified resource problems, and improve and maintain rangeland conditions and forest health.

It is important to note that the joint committees agree that there was no prioritization of either problems or goals and that all elements contribute to existing watershed conditions and desired future watershed conditions.

1998 project proposals involving 15 sites, located throughout the river basin and addressing all stocks, have been identified. On site project assessments have been completed by the Inter-Disciplinary Team. Conceptual drawings are being completed and information gathered for Biological Assessment for submission to BPA and NMFS.

All project corrective actions were formulated utilizing watershed plan goals and objectives. Proposed actions involve implementation of rock vortex weirs, rock/log barbs, LWD placement, rootwad revetment, riparian re-vegetation and enhancement, and meander reconstruction.

Which projects receive BPA funding, other grant funding or combinations of funding are not known at this time as funding commitments are needed to maximize project implementation.

Personnel from USDA NRCS, USFS, NMFS, USFW, WDFW, WDOE, WSU Extension, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Indian Tribe, Columbia County Planning, Columbia County Transportation Department, Columbia County Commissioners and BPA were invited by the District to be a part of the Technical Advisory Committee, while the Landowner Steering Committee consists of landowners within the watershed. The Inter-Disciplinary Team consists of Watershed Technical Lead, NRCS and WDFW staff, and landowner.

b. Proposal objectives. Specific, measurable objectives or outcomes for the project should be presented concisely in a numbered list. Research proposals must concisely state the hypotheses and assumptions necessary to test these. Non-scientific projects must also state their objectives. Clearly identify any products (reports, structures, etc.) that would result from this project. For example, an artificial production program may state the species composition and numbers to be produced, their expected survival rates, and projected benefits to the FWP. A land acquisition proposal may state the conservation objectives and value of the property, the expected benefits to the FWP, and a measurable

goal in terms of production. Methods and tasks (in heading e, below) are to be linked to these objectives and outcomes (by number).

Implementation of 1998 projects builds on past efforts of habitat enhancement and continues to build on the creditability between landowners and agencies and the commitment to achieve desired goals.

Project Objectives:

1. Reduce stream temperatures through the implementation of bio-engineering and riparian plantings. The District will be receiving approximately 6000 Dormant Stock Plants from the WACD Plant Material Center. These materials will be utilized for 1996 & 1997 project site riparian re-vegetation and will utilize Salmon Corps and volunteers for plantings.

2. In-stream structures will provide the following enhancements; resting and rearing pools with LWD, interstitial spacing between boulders and LWD/rootwads, enhanced width to depth ratios, added meanders, enhanced complex fish habitat, and sorted gravels below structures of suitable spawning habitat. These habitat enhancement values are identified on all project sites.

3. Reduce sedimentation rates in spawning gravels through riparian enhancement/re-vegetation, riparian fencing, off channel watering and upland BMP implementation. The District continues to identify and secure other grant fund sources to support BPA's efforts for total watershed enhancement management.

4. Reduce fecal coliform levels through riparian enhancement/re-vegetation, riparian fencing, and off channel watering. The District continues to identify and secure other grant fund sources to support BPA's efforts for total watershed enhancement management.

5. Project Effectiveness - monitoring/evaluation

The development and implementation of short and long term monitoring/evaluation plans will enhance creditability to the watershed plan and its implementation. The ability and opportunity to utilize the expertise and resources of WDFW Snake River Lab personnel in conjunction with the Landowner Steering and Technical Advisory Committees is invaluable and contributes to the overall success of the project.

The District and Watershed Planning Team promotes total watershed protection and enhancement. It is their and the Inter-Disciplinary Teams intent to address watershed plan problems, goals, and objectives in project selection and corrective actions to be taken, while enhancing total watershed health.

c. Rationale and significance to Regional Programs. The rationale behind the proposed project should be presented and project objectives and hypotheses related as

specifically as possible to the FWP objectives and measures or to other plans. You should make a convincing case for how the proposed work will further goals of the FWP. Relevant projects in progress in the Columbia Basin and elsewhere should be listed and discussed in relation to the proposed project. Arrangements should be identified and documented for cooperation and synergistic relationships among the proposed project, *other project proposals*, and existing projects. Any particularly novel ideas or contributions offered by the proposed project should be highlighted and discussed.

The rationale behind the ongoing Eastern Washington Model Watersheds, Tucannon River Model Watershed implementation funding is based on the goals found in the 1994 Fish and Wildlife Program, part 7.7B “Model Watershed,” and WDFW Wild Salmonid Policy. Specifically they both refer to “Bottom Up”, “locally driven” watershed planning and implementation. It also identifies implementation of priority on-the-ground actions that address key limiting factors for salmonids which is the approach the planning and implementation team has taken.

Implementation of the Tucannon river Model Watershed Plan goals and objectives, while utilizing adaptive management techniques, will effectively address habitat enhancement for ESA listed weak populations without appreciable adversely affecting watershed biological diversity with the ultimate outcome being watershed health at a self-sustaining level for ESA listed species.

- d. Project history** (for continuing projects). If the project is continuing from a previous year, the history must be provided. This includes projects that historically began as a different numbered projects (identify number *and short title*). For continuing projects, the proposal primarily will be an update of this section. List the following:
- project numbers (if changed)
 - project reports and technical papers
 - summary of major results achieved
 - adaptive management implications
 - years underway (see attached spreadsheet)
 - past costs (see attached spreadsheet)

BPA provided \$554,410 to the Washington State conservation commission to support the tree Model Watershed Technical Lead Positions from October 1992 through September 1997. The contract for these funds is 9202602. Through this contract the District has received an average of \$37,000 over the past two years for the Technical lead position.

The Tucannon Model Watershed Technical Lead facilitated the model watershed plan process which identified salmonid and watershed habitat limiting factors and action for restoration. Over the past two years, the District has received \$329,954 directly from BPA to implement water quality and habitat enhancement projects identified in the Plan. The contract for those funds is 9401800.

In 1997 the District received \$200,027 directly from BPA(project numbers-96-065-02, 97-81, Tucannon Rootwad collection) for in-stream habitat enhancement projects. Project reports are currently being finalized. All funds were spent on in-stream and riparian fish habitat enhancement projects. During 1997 twelve new sites and five 1996 project O&M

sites were installed. A 1996 carry over fish habitat project was also installed with funds carried forward. Projects were designed to address critical habitat elements identified in the Tucannon Model Watershed Plan. Upland projects were funded through other grant sources.

In 1996 the District received \$129,927 directly from BPA(project numbers-94-18-3,96-065-00) for habitat enhancement projects. Those funds were matched in a 1:1 ratio with funds from the Washington State Conservation Commission effectively doubling dollars spent. Of the BPA funds, \$71,163 were spent on in-stream habitat structures, \$25,902 on an off river sediment basin, and \$25,541 was rolled into 1997 for an identified project which was not installed due to WDFW identified in-stream work window. An in-depth report was submitted to the NWPPC summarizing the 1996 habitat projects, as well as the entire watershed plan process.

BPA funding has been effectively enhanced by the in-kind contributions of USDA-NRCS. The technical assistance received from NRCS has totaled in excess of \$113,000 over the past two years, thus allowing greater watershed habit enhancement than would have otherwise been possible.

e. Methods. How the project is to be carried out based on sound scientific principles should be described (this is applicable to all types of projects). Include scope, approach, and detailed methodology. If methods are described in detail in another document, summarize here and cite reference. The methods should include, as appropriate, but not be limited to such items as:

- tasks associated specifically with objectives
- critical assumptions
- description of proposed studies, experiments, treatments or operations in the sequence that they are to be carried out
- any special animal care or environmental protection requirements
- any risks to habitats, other organisms, or humans
- justification of the sample size
- methods by which the data will be analyzed
- methods for monitoring and evaluating results
- kinds of results expected

Each proposer should complete the methods section with an objective assessment of factors that may limit success of the project and/or critical linkages of the proposal with other work (e.g., a smolt monitoring program, etc.).

Specific tasks associated with the implementation of objectives as identified in Section 4 will be facilitated by the Model Watershed Technical Lead through the Model Watershed Organizational Structure. The structure includes: Landowner Steering Committee, Technical Advisory Committee, Inter-Disciplinary Team, Landowners, and Public input. These committees and groups identify, assess, design, and prioritize projects, however it is the Technical Lead who facilitates the coordination of project implementation. The

Technical Lead also insure projects reflect the goals and objectives as identified in the Model Watershed Plan. He oversees the project plan development, biological assessment development and submission, landowner acceptance and agreement, secures contract resources, and coordinates volunteers to insure implementation of habitat enhancement projects.

Long-term habitat enhancement retention is expected as a result of the Plan and project implementation. Monitoring and evaluation assessments will provide guidance for structural enhancement through the adaptive management process.

The Watershed Plan identifies factors from monitoring and evaluation. These factors are the basis for pre and post construction assessments for water quality and habitat enhancement projects. NRCS staff evaluates and monitors projects for structural performance integrity.

TUCANNON MODEL WATERSHED PROJECT SITE MONITORING AND EVALUATION

At the request and direction of the Tucannon River Model Watershed Technical Lead, Landowner Steering and Technical Advisory Committees, The Tucannon Model Watershed Fish Habitat Enhancement Project Monitoring and Evaluation Plan as described here was developed by Snake River Lab (WDFW) personnel. The M&E Plan is based upon a short term approach due to time constraints and the variability of funding over the next ten years. Limited funding has been appropriated for 1998 project monitoring and evaluation. It is understood by the Landowner Steering and Technical Advisory Committees that if the plan and data are to withstand technical scrutiny and peer review, that a committed long term funding source will be required to develop and implement a solid multiple year monitoring and evaluation plan. Under the direction of the Tucannon Model Watershed Technical Lead and acceptance by the Landowner Steering and Technical Advisory Committees the Washington Department of Fish and Wildlife, with consultation with Del Groat of the USFS, will develop the experimental design of the monitoring and evaluation plan for long term project effectiveness and that the Snake River Lab (WDFW) will receive funding through the Columbia Conservation District to conduct the work.

Monitoring and evaluation requires that an experimental design be developed and that hypothesis be established and tested. For the short term plan, we developed very basic hypothesis and methods to test them. There are three general categories that need monitored and evaluated, they are 1)Physical site stability, 2) Fish utilization, and 3) Instream and riparian habitat.

WDFW will address and provide monitoring and evaluation for the second two categories. The NRCS will develop and provide a monitoring and evaluation plan for the first category, physical site stability. WDFW encourages that the following variables be addressed by the NRCS monitoring and evaluation plan for physical site stability, 1) Bank

erosion, 2) Geomorphic channel stability, 3) Stream bed aggradation/degradation, 4) Substrate fines, 5) Bank full width, 6) Gradient, and that 7) Photopoints be established. WDFW also strongly encourages the deployment of sediment samplers to three locations, 1) Marengo, 2) immediately above the Pataha Creek, and 3) within one mile downstream of Pataha Creek.

Regarding fish use and habitat improvement, we hypothesize that the projects should improve the instream and riparian habitat quality and quantity, and that fish will utilize the sites greater than other locations in the river. We developed the following specific hypothesis and methods that will be used to test the hypothesis:

Ho: Juvenile spring chinook salmon and steelhead trout utilize project sites (treatment) greater than similar pre-project control sites above Marengo.

Method: Every 1997 project site will be evaluated and juvenile fish density determined by snorkeling in 1998. The density in treatment sites will be compared to 1998 WDFW snorkel data (control sites) and t-test comparisons will be made to see if there is a statistical difference between control and treatment site juvenile fish densities.

Ho: Adult steelhead trout utilize project sites (treatment) greater than similar pre-project control sites below Marengo, and there is a relationship between project type and fish catch rate.

Method: A team of experienced steelhead anglers will be established and will fish treatment and control sites below Marengo in the winter of 1989 - 1990. Catch rate (number of fish caught per hour) and the number of fish caught in the treatment and control sites will be recorded. The type of structure fished will also be recorded to determine if adult steelhead prefer a particular structure type (ie. root wad revetment, barb, rock weir, vane, etc.) It is expected that catch rate will vary, and therefore be statistically difficult to determine a difference. However, due to limited funding, volunteer angling is the preferred method.

Ho: Spring Chinook Salmon and Steelhead Trout prefer to spawn in project sites.

Method: Conduct redd surveys and record whether a redd was constructed in a project site or elsewhere. Habitat preference will be determined by dividing habitat use (# of redds in projects and # of redds in remainder of river) by habitat availability (cumulative length of projects and total length of river). For instance if 10 redds are constructed in 1 cumulative mile of projects, while 20 redds are constructed in the remaining 20 miles of river, then $10/1 = 10$ and $20/20 = 1$. So, in this example, fish prefer to spawn in projects 10 times greater than in other river locations.

Ho: In-stream habitat quality is increased one year after project construction.

Method: The experimental design will be based on a before - after approach, as opposed

to a treatment - control approach. Project sites will be identified and surveyed prior to construction in 1998, then in 1999 to determine if habitat quality increases after project construction. The river will be stratified into two strata, 1) above Marengo, and 2) below Marengo. Basic habitat measurements will be recorded prior to project construction and again in the summer of 1999. Measurements will include 1) Pool number, 2) Pool area, 3) Maximum and average site depth, 4) Pool quality, 5) Quantitative and qualitative counts of woody debris, and 6) Standard deviation of thalweg depth.

Ho: Stream water temperatures decrease over time (10 years).

Method: Continuous recording thermographs will be deployed in each of five general locations, 1) at WDFW Wooten Wildlife Area, 2) at bridge 14, 3) at Marengo, 4) at highway 12, and 5) at Starbuck. Summer time (July 1 through September 31) mean and maximum temperatures, and accrued thermal units will be compared from 1998 to 2008.

NOTE: Post construction and long term M&E will be conducted on 1996 projects, in relation to juvenile and adult salmonid population usage and habitat complexity as previously identified, depending on funding availability.

f. Facilities and equipment. All major facilities and equipment to be used in the project should be described in sufficient detail to show adequacy for the job. The proposal should indicate whether there are suitable (based on contemporary standards) field equipment, vehicles, laboratory and office space and equipment, life support systems for organisms, and computers, for example. Any special or high-cost equipment to be purchased with project funds should be identified and justified. Reference to other proposals is allowed but note that limitations of those proposals could effect the evaluation of the ones citing them.

Columbia Conservation District obtains help from the USDA Natural Resources Conservation Service (NRCS) through a working agreement called the "Memorandum of Understanding." Other USDA agencies currently working with the district under such an agreement are: U.S. Forest Service, U.S. Department of Interior, cooperative Extension Service, US Army Corps of Engineers, Farm Service Agency, and the Columbia County Commissioners.

The NRCS provides the District with in-kind services including: technical assistance, office space, office equipment, minor field equipment, and phone service. The total match exceeds \$27,000.00 per year.

The District currently uses the Internet and has two computers, a copier, and Fax machine that can be used by the NRCS staff. The working relationships between the District and USDA agencies are in great working order.

Currently we are not identifying any equipment that needs to be purchases with project funds. The District has the ability to use any field or office equipment to get the job finished in a proficient manner.

g. References. (Not included in 10-page limit for this section.) Provide complete citations to all publications referred to in Sections 6a-f. List in order: author(s), date, title, report number, publisher or agency, location. References will not be read by reviewers; the substance of any reference should be described in the text and the source cited. Sample citation:

Rondorf, D.W., and K.F. Tiffan. 1997. Identification of the spawning, rearing and migratory requirements of fall chinook salmon in the Columbia River Basin. Annual Report 1995. DOE/BP-21078-5, Bonneville Power Administration, Portland, Oregon.

Tucannon River Model Watershed Plan Final Draft 1997. Columbia Conservation District.

Strategy for Salmon. Vol. II. 1992. NWPPC, Portland, Oregon.

Wild Salmonid Policy. 1997. WDFW. Olympia, Washington.

Section 8. Relationships to other projects

Indicate how the project complements or includes collaborative efforts with other projects; put the work into the context of other work funded under the FWP. If the proposed project requires or includes collaboration with other agencies, organizations or scientists, or any special permitting to accomplish the work, such arrangements should be fully explained. If the relationship with other proposals is unknown or is in conflict with another project, note this and explain why.

This is not intended to duplicate the Relationships table in Section 3. Instead, it allows for more detailed descriptions of relationships, includes non-interdependent relationships, and includes those not limited to specific Bonneville projects.

Habitat enhancement projects in the Tucannon River started in the 1980's when the District's first watershed restoration proposal to BPA was submitted. Limited in stream and riparian enhancement projects followed, funded on a cost-share bases with key landowners through a grant from WDOE. The success of these demonstration projects lead to increased awareness of in-stream restoration and upland conservation efforts in the watershed. Landowners continued to adjust upland management systems with positive impact to the rivers riparian and in-stream environment. WDOE grant funded demonstration projects included rock and boulder placement, cabled trees, riparian fencing, limited access water facilities, off site watering facilities, and DSP by thousands of volunteer sportsmen and students. USDA NRCS initiated the PL-566 program in the Tucannon Watershed to cost-share management conservation systems, reduce erosion, and the deterioration of overall watershed health. Grant money from the Washington Conservation Commission and WDOE continued to positively impact conservation through cost-share programs and NRCS technical support in-kind made major strides with landowners. The 1996 and 1997 floods had devastating effects on the watershed. Grants from the Commission, WDNR, WDOE dove tailed with BPA funding to initiate the

implementation of the Tucannon Model Watershed Plan prior to publication. During 1996 and 1997 funds from the Commission, WDNR, WDOE, Columbia County, and landowners implemented \$347,450 in fish habitat enhancement structures. BPA funding was above and beyond this figure.

Section 9. Key personnel

Include names, titles, FTE/hours, and one-page resumes for key personnel (i.e. principal investigator, project manager), and describe their duties on the project. Emphasize qualifications for the proposed work. Resumes should include name, degrees earned (with school and date), certification status, current employer, current responsibilities, list of recent previous employment, a paragraph describing expertise, and up to five recent or especially relevant publications or job completions.

Terry Bruegman
Tucannon River Model Watershed Technical Lead

Education: AA - Criminal Justice, Green River Community College 1972

Current Employer: Columbia Conservation District

Current Responsibilities: As District Coordinator, responsible for performing management and administrative duties in relation to District and Model Watershed Programs as directed by the Columbia Conservation District Board of Supervisors.

Recent Previous Employment:

- April 1997-Present: District & Model Watershed Coordinator, Columbia Conservation District, Dayton, WA.
- April 1995-April 1996: Laborer, Equipment Operator 1996 flood recovery efforts and Ag. Production.
- October 1981-April 1996: Wildlife Area Manager, WDF&W - Manage a wildlife area for production and restoration of fish and wildlife habitat and compatible public use including the development & implementation of annual and long range management plans and budgets and acting as liaison with the public, landowners, and agency representatives.
- February 1977-October 1981: Assistant Superintendent, Ellensburg Game Farm - Primary assistant to superintendent, responsible for organizing and supervising seasonal and voluntary work crews, liaison between public, landowner and agency representatives.
- March 1972-February 1977: Superintendent, Walla Walla Game Farm - Develop and implement annual and long term management plans and budgets, hire, supervise and train seasonal employees, supervise voluntary work crews, liaison between public, landowner and agency representatives.

Expertise: Self-motivated individual with extensive experience in working with the general public, landowners and government agencies in relation to natural resource management. Positive personality with flexibility to adjust to changing work environments. Ability to objectively listen to concerns of various parties and develop a pro-active working solution. Very pro-active for on ground implementation and results while addressing various concerns.

Gregory D. Schlenz

Title: District Conservationist
Employer: USDA - NRCS
Project: Columbia Conservation District - Tucannon River
FTE: Blue Mountain Team NRCS Commitment 1920 hours
Duties: Coordinate NRCS activities associated in watershed

Qualifications

Degrees: BS Range Management/Forest Management Minor, Washington State University, 1980
Publications: Team member in the development of the Draft Tucannon Model Watershed Plan.
Previous Employer: Oregon State University School of Forestry 1981-1983
USFS-Region 6 Continuous Inventory Forester 1980
USFS-Gifford Pinchot NF Forestry Tech. 1977-1980
Job Experience: SCS Range Conservationist, Waterville, WA. 3yrs, SCS District Conservationist, Newport, WA. 5yrs, NRCS district Conservationist, Dayton, WA. 6yrs
Expertise: Project Implementation, Coordinating Watershed activities as related to riparian and upland treatment practices within NRCS Blue Mountain Team.

Resume for Frank Easter

Name:	Frank Easter
Title:	Watershed Planning Team Leader
Employer:	NRCS
Project:	Columbia Conservation District - Tucannon River
FTE:	80 hours
Duties:	Watershed Staff Supervisor
Qualifications:	
Degrees:	AS Forestry Grays Harbor College 1969, BS Range Management

	Washington State University 1971
Publications:	Team Leader in the Development of 9 Watershed Plans, 6 River Basin Studies and 4 Flood Plain Management Studies
Certifications:	None
Previous Employer:	USFS - Wallowa Whitman NF 1969 - 70
Job Experience:	SCS Range Conservationist - 2yrs, SCS Soil Conservationist - 2 yrs, SCS District Conservationist 7 yrs, SCS Area Conservationist 9 yrs, SCS Assistant State Conservationist 4 yrs, NRCS Watershed Planning Team Leader 3 yrs.
Expertise:	Watershed Planning, NEPA, Project Implementation, Nutrient Management, Program Management

Resume for Barry Southerland

Name:	Barry Southerland
Title:	Soil Conservationist
Employer:	USDA/NRCS
FTE:	120 hours for Columbia Conservation District 1998 BPA projects
Duties:	Provide technical assistance to the CCD as a member of the Tucannon Technical Advisory Team. Serve as the lead when determining alternatives for stream and river restoration projects.
Qualifications:	
Degrees:	BS Range/Soils Utah State University MPA Natural Resources Management - Brigham Young University
Publications:	Co-author of several watershed plans, river basin studies,
Certifications:	Professional Erosion and Sediment Control Specialist
Previous Employer:	BLM
Job Experience:	Range Conservationist 3 years Soil Conservationist 5 years Supervisory Soil Conservationist 2 years HU Project Coordinator 2 years NRP Resource Conservationist 5 years Fluvial Geomorphologist 2 years
Expertise:	Resource data collection that is used for alternative development for watershed treatment. Emphasis on fluvial geomorphic stream and river restoration. Works as member of an interdisciplinary stream team in Washington.

Resume for Mark Schuller

Name:	Mark Schuller
Title:	State Fish Biologist
Employer:	USDA/NRCS
Project:	Columbia Conservation District - Tucannon River
FTE:	150 hours
Duties:	help decide what measures should be taken to improve habitat for salmonid fish in damaged stream sections that are proposed for property protection or improvement; help design, implement, and monitor habitat improvement projects; act as liaison with other environmental agencies and groups involved with these and similar projects.
Qualifications:	
Degrees:	Graduate of Boeing mechanical drafting course - 1968 BS in Fisheries Science with minor in Wildlife - University of Washington, 1972; Steelhead life history study in Graduate School at U of W until Sept. 1974
Publications:	“Cemeteries as Floral and Faunal Preserves” - Pacific Search Magazine, 1970 co-author of Asotin Creek Model Watershed Plan (1995); Draft Tucannon River Model Watershed Plan (1997); Draft Pataha Creek Model Watershed Plan
Certifications:	none
Previous Employer:	Washington State Department of Fisheries (1974-1993)
Job Experience:	Regional Habitat Manager for WDF - overseer of numerous stream projects; designed and implemented many fish habitat restoration projects with volunteers in northwest Washington; coordinated projects and permits with numerous environmental agencies and groups.
Expertise:	working with landowners and volunteers to improve fish habitat

Resume for Larry Cooke

Name:	Larry Cooke
Title:	State Environmental Specialist
Employer:	USDA/NRCS
FTE:	100 hours for Columbia Conservation District 1998 BPA projects
Duties:	Provide leadership and coordination with the gathering of resource information that is used for BPA's consultation with NMFS and USFWS in regards to the ESA.
Qualifications:	
Degrees:	BS Natural Resources Management, OSU 1974

Publications	Participated in the preparation of several watershed plans, BA's and conservation field trials
Certifications:	Licensed as Professional Pesticide Consultant
Previous Employer:	USFS, and Agricultural Research Service
Job Experience:	Conservation Technician 2 years Soil Conservationist 2 years District Conservationist 14 years Environmental Specialist 5 years
Expertise	Participated in the preparation of 8 watershed plans in Idaho and Washington, co-author of 7 Biological Assessments, experience with cropland and forestland planning. Experience with implementing several USDA programs such as EWP, FSA, FACTA, PL-566, ACP

Resume for Larry Johnson

Name:	Lawrence (Larry) A. Johnson
Title:	Engineering Team Leader
Employer:	USDA - NRCS
FTE:	80 hours for Columbia Conservation District 1998 BPA projects
Duties:	Design Review Construction Site Visits Assist with BA development Develop Soil Bio-Engineering Standard Drawings
Qualifications:	
Degrees:	BS Civil Engineering
Publications:	
Certifications:	Professional Engineer, Washington State
Previous Employer:	Perini Corporation
Job Experience:	Hydraulic Engineer, 1 year State Design Engineer, 2 years Assistant State Design Engineer, 1 year Field Engineer, 3 years Snow Survey Hydrologist, 1.5 years Construction Engineer, 1 year
Design Expertise:	Soil Mechanics: Foundation Design Seepage Analysis Retaining Wall Design Slope Stability Design

Foundation Design
 Soil Bio-Engineering Design
 Hydrology Studies
 Open Channel Hydraulics Analysis
 Irrigation Design

Resume for David Brower

Name:	David R. Brower
Title:	Cartographer
Employer:	USDA/NRCS
FTE:	40 hours for Columbia Conservation District 1998 BPA projects
Duties:	Provide technical expertise to develop resource databases for watershed plans and soils assessments. Provide technical leadership and guidance to staff members for the understanding and application of spatial information. Coordinate geospatial data exchanges with federal, state, and local GIS users.
Qualifications:	
Degrees:	BA Geography, Cartography Emphasis, U of Montana 1988
Publications	Produced geologic maps for <u>The Roadside Geology of Idaho</u> (Missoula: Mountain Press, 1989) by Alt and Hyndeman. Created landform illustrations and block diagrams for <u>Landforms for Soil Surveys in the Northern Rockies</u> (Missoula: U. of M. School of Forestry Misc. Pub. No. 51, June 1990) by Hoeldorf and Donahue. Participated in the preparation of watershed plans, floodplain management studies and soils survey publications (1991-1997).
Certifications:	
Previous	
Employer:	Johnson County Planning Department, Kansas, 1991
Job Experience:	Circulation Clerk, U of Kansas Map Library 1 year Production Supervisor, U of Kansas Cartographic Service 1 year Senior Map Editor, Johnson County Kansas Planning Dept. 1 year Watershed Planning Cartographer, USDA NRCS 6 years
Expertise	Participated in the preparation of 9 watershed plans, 3 floodplain management studies, 2 stream assessments and 1 river basin study in Washington State since 1991. Experience with implementing several USDA programs including EWP, EQIP, PL-566, CRP, and Soil Surveys.

RESUME FOR BPA WATERSHED/STREAM PROJECTS

Roberta L. Lewis, PE

Civil Engineer, USDA-Natural Resources Conservation Service

Education & Experience:

- BS Civil Engineering (emphasis in Water Resources), University of Nevada, Reno, 1983
- Registered Professional Engineer (Civil) in states of Idaho and California
- Watershed Project Engineer for Asotin Creek, Pataha Creek and Tucannon River Model Watersheds

Previous Employment:

USDA-NRCS, Nevada:

- Inter-Field Office Engineer, responsible for design of small irrigation projects and systems.
- Field Office Engineer, responsible for irrigation systems designs, Irrigation Water Management Program development, and BP-566 Watershed Project/River Basin Project Development.

USDI-Bureau of Reclamation:

- Water Conservation Program Manager, Upper Columbia Area Office.
- Facilities Examiner for Major Facilities Review of Operation and Maintenance Program (large dams, canals, pumping plants, etc.), Mid-Pacific Region.
- Facilities Examiner for Minor Facilities Review of Operation and maintenance Program (small dams, canals, pumping plants, etc.), Mid-Pacific Region.

Other Relevant Qualifications:

- Construction Inspector for emergency Watershed Project: Dozier-McCaw site on Touchet River. (Construction of stream bank protection measures).
- Attended Erosion and Sediment Control Systems training by NRCS, May 1997.
- Attended Geomorphology Seminar by NRCS, March 1997.
- Worked with BPA/NWPPC on planning in stream flow enhancement project on Teanaway and Yakima Rivers.
- Designed and supervised construction of 14 watershed projects in 1997.

Steve Martin
209 E. Washington, Dayton, WA, 99328

Employment and Education:

- 1984-1988 Eastern Washington University, BS Biology
- 1988-1991 WDF and WDW Fisheries Technician
- 1991-1992 Graduate School, Eastern Washington University, MS Fisheries Biology

- 1993-1996 WDFW Fisheries Biologist, Yakima Fisheries Project
- 1996-current WDFW Habitat Biologist

Primary Publications:

- Martin, S. W. 1992. Investigations of bull trout, steelhead trout, and spring chinook salmon interactions in southeast Washington streams. Master's Thesis, 1992
- Martin, S. W. et. al. 1993. Investigations of the interactions among hatchery reared summer steelhead, rainbow trout, and wild spring chinook salmon in southeast Washington. Project report.
- Martin, S. W. and T. N. Pearsons. 1994. Age and growth of rainbow trout in the upper Yakima River basin. Annual report.
- Martin, S. W. and T. N. Pearsons, and S. A. Leider. 1994. Rainbow and steelhead trout temporal spawning distribution in the upper Yakima River basin. Annual report.
- Martin, S. W. and T. N. Pearsons. 1994. Variation in rainbow trout populations of the upper Yakima River: implications for ecological impact assessment. Vol. 68, No. 2.
- Martin, S. W. and T. N. Pearsons. 1995. Species and habitat associations of spring chinook salmon and rainbow trout in the upper Yakima River. Annual report.
- Martin, S. W. 1995. Salmonid distribution and rainbow trout population abundance variation in the upper Yakima River. Annual report.
- Martin, S. W., J. A. Long and T. N. Pearsons. 1995. Comparisons of survival, gonad development, and growth between rainbow trout with and without surgically implanted dummy radio transmitters. North American Journal of Fisheries Management. 15:494-498.

Presentations and Public Meetings:

- 1993 American Fisheries Society 1993 annual meeting in Portland, Oregon. Poster presentation. Title: Temporal and spatial distribution of rainbow trout spawning in the Yakima Basin.
- 1993 Wenatchee Flyfishers. Update on Yakima Fisheries Project research. Presentation given annually form 1993 through 1996.
- 1994 Northwest Science Association. Title: Variation in rainbow trout populations of the upper Yakima River: Implications for ecological impact assessment.
- 1995 American Fisheries Society, North Pacific International Chapter annual meeting in Vancouver, B. C. Presentation title: Interactions between and relationships among fish size, stream size, and redd size.
- 1995 Cascade Field and Stream Club. Update on Yakima Fisheries Project research.
- 1996 Pacific Coast Steelhead Management annual meeting, Portland, Oregon. Title: Ecological risk containment associated with steelhead supplementation in the upper Yakima Basin.

- 1996 Oregon Chapter of the American Fisheries Society, 1996. Life history, ecology and genetics of rainbow trout in the upper Yakima River.

Name: **Mark L. Schuck**
 Title: Fish Biologist 4
 Employer: Washington Department of Fish and Wildlife (WDFW)
 600 Capitol Way N
 Olympia, WA 98501

Local Address: 401 South Cottonwood
 Dayton, WA 99328

Phone: (509) 382-1004
 FAX: (509) 382-2427
 e-mail: schucmls@dfw.wa.gov

Education: Colorado State University, 1974
 B.S. Fish Biology

Current Duties: Project Leader; Lower Snake River Compensation Plan hatcheries evaluation program. Responsible for overseeing WDFW's evaluation of a federal mitigation program designed to replace fish resources lost due to construction of the four Snake River power dams. Evaluation activities are currently being undertaken for spring and fall chinook salmon and steelhead in several rivers in S.E. Washington. Duties include assisting with experimental design and implementation of studies, budgeting and report writing. Reports are submitted in both annual progress report and final refereed journal formats.

Previous Duties: Served as District Fish Management Biologist for WDFW in Asotin, Columbia, Garfield and Walla Walla counties; 1984-1994.

Expertise: Have managed or researched the fish resource in S.E. Washington since 1982. Have been actively involved with evaluation of a major hatchery trout/ steelhead mitigation program since its inception in 1982 and with salmon and trout under the mitigation program since 1995. Helped conduct an evaluation of in stream habitat improvements in Asotin Creek and Tucannon River in 1989 as part of the mitigation program.

Publications: Viola, A.E., M.L. Schuck and S.A. Nostrant. 1991. An Evaluation of In stream Habitat Alterations in Southeast Washington, 1983-1989. Washington Department of Wildlife. Report #FM 91-11.

Viola, A.E. and M.L. Schuck. 1995. A Method to Reduce the

Glen W. Mendel

Washington Department of Fish and Wildlife
Snake River Lab, 401 S. Cottonwood St, Dayton WA. 99328

Education:

- Supplemental Aquatic biology courses (1983), University of Idaho
- M.S. Wildlife Resources (1979), University of Idaho.
- B.S. Wildlife/fisheries (1975) University of Idaho
- B.S. Biology (1973) University of Idaho.

Employment History:

Fish Biologist 3 (fish management) for the Washington Department of Fish and Wildlife (WDFW) in SE WA (part-time since April 1997). Assistant project leader for evaluation of Lyons Ferry Hatchery program for spring and fall chinook salmon and steelhead (Mar. 1994-present).

Fishery Biologist 3 for the Washington Department of Fisheries (5/1991 to 3/1994). Field supervisor for three projects: Monitoring and evaluation of Lyon's Ferry spring and fall chinook salmon hatchery programs (as part of the Lower Snake River Compensation Plan - LSRCP), and conducting adult fall chinook salmon radio telemetry research to evaluate upstream migration and spawning in the Snake River. Planned, directed and supervised these projects with 3 permanent staff, and up to 10 seasonal support staff.

Habitat Biologist 3 for the Washington Department of Wildlife (12/1988 to 5/1991). Main duties included reviewing and responding to environmental permits to protect fish and wildlife and their habitats in 3 SW Washington counties.

Fish Biologist 2 for the Washington Department of Wildlife (7/1984 to 12/1988). Assistant project leader for evaluation of Lyon's Ferry trout Hatchery, as part of the LSRCP.

Wildlife Biologist 2 for the Washington Department of Game (5/1983 to 7/1984). Biologist in charge of the In stream Habitat Improvement Study for several streams in SE WA.

Biologist - Fisheries (GS/7) for the US Army Corps of Engineers (Jan-Sep. 1982, Apr. - Jun. 1981). Field supervisor for radio telemetry studies of chinook salmon to evaluate adult passage facilities at two dams on the Lower Snake River. Supervised crews of 10-12 bio-techs and bio-aids.

Wildlife Biologist 2 for the Washington Department of Game (June - Dec. 1981, Jan. - Apr. 1981). Senior biologist on a study of anadromous fisheries enhancement potential in SE WA. Evaluated salmonid habitat and predicted salmonid biomass in streams by using the Wyoming HQI model. Estimated fish populations from electrofishing samples at 46 sites in 9 streams. Assisted with data collection for the In stream Flow Incremental Methodology.

Research Aid for the University of Idaho Cooperative Fisheries Research Unit (Sept. 1980 - Jan. 1981). Implanted radio transmitters in steelhead trout and monitored their movements and catchability in relation to discharges from Dworshak Dam on the Clearwater River, ID.

Wildlife Biologist (GS/7) for the USDA Soil Conservation Service (May 1979 - Dec. 1979). Compiled information from the literature on habitat requirements of 27 wildlife species (Habitat Suitability Indices) as part of the US Fish and Wildlife Service's HEP Handbook for the Columbia Plateau of the Intermountain West.

Technician positions (temporary) for the University of Idaho fishery program.

Publications: several publications in journals and symposium proceedings, and many agency reports.

Arthur E. Viola

Washington Department of Fish and Wildlife, Snake River Lab. 401 South Cottonwood Dayton, Washington 99328 (509) 382-4755.

Education

Masters degree in Fish and Wildlife Management, Montana State University, April 1986; graduate work in fisheries at Utah State University and Humboldt State University, CA Bachelor of Science degree in biology, Southern Connecticut State College, May 1973.

Employment history :

Fish Biologist III, (7/97 - present) **Washington Department of Fish and Wildlife Snake River Lab.** Identify, design, conduct analyze, interpret and report appropriate research for the Lower Snake River Compensation Plan program (steelhead / trout mitigation) in southeast Washington. Relate findings to LSRCP and fish management needs in area rivers.

Fish Biologist II, Assistant project leader, (3/89 - present). Washington Dept. of Fish and Wildlife, Snake River Lab.

Assist with all responsibilities for the Lyons Ferry Hatchery Evaluation study and Fish Management activities in Southeast Washington.

Fish Biologist III, (12/92-3/92) Acting Project Leader, Washington Dept. of Wildlife, 411 S. First, Dayton, WA 99328. (509) 382-4391. Assume all responsibilities for the Lyons Ferry Hatchery Evaluation study and Fish Management activities in Southeast Washington During project leader's absence.

Biological Technician, (3/85 - 7/97) Bozeman Fish Technology Center, USFWS 4050 Bridger Canyon Rd., Bozeman, MT 59715. (406) 587-9265. Care for experimental and production groups of salmonid eggs, fry, fingerlings and adults, Conduct experimental projects to develop innovative fish culture methods related to the needs of fish management, write reports, maintain fish planting reports and computerized lot history records.

Assistant Special Project Biologist, (8/84 - 3/85). In stream flow-fisheries project on Bitterroot River, Hamilton, MT. Assist in the development of a water management plan designed to mitigate problems caused by river water diversions used for irrigation. Montana Dept. Fish, Wildlife & Parks.

Seasonal Fishery Biologist, (5/79 - 9/79), (5/78 - 12/78), (9/77 - 10/77). Wyoming Game & Fish Department, Jackson, WY. Fisheries management, data collection, fish population estimates, electro-fishing, gill netting, habitat surveys, stream improvement work, creel census, public information services, water chemistry, reclamation of ponds, working fish traps on spawning tributaries, mapping redds, planting eyed eggs, evaluation of high mountain lake fisheries.

Seasonal Fishery Biologist, (4/77 - 7/77). California Fish & Game Department, Weaverville, CA.

Fish management.

Fishery Field Worker, (5/76 - 9/76). Montana Dept. Fish, Wildlife & Parks, Lewistown, MT.
Fishery Management.

Fishery Research Assistant, (7 - 75 - 9/75). Utah State University Fish Co-op Unit, Logan, UT.
University research position.

Fisheries Research Assistant, (3/74 - 10/74), (9/73 - 11/73), (6/72 - 9/72). Connecticut Dept. of
Environmental Protection (Fish & Game Dept.) Assist fishery biologist

Relevant publication:

Viola. A.E., M.L. Schuck and S.A. Nostrant 1991. An evaluation of In stream Habitat Alterations
in Southeast Washington, 1983-1989. Final report. Washington Department of Wildlife to the
U.S. Fish and Wildlife Service Report NO. AFF1/LSR-90-14.

Resume of
Joseph D. Bumgarner

2039 Carl St
Walla Walla, WA 99362
509-529-8561(home) 509-382-4755(work)

EDUCATION:

Master of Science June, 1993 University of Washington, Seattle, WA
(Fisheries) **G.P.A. 3.5**; *Honors: Richard Van Cleeve Merit Scholarship*

Bachelor of Science December, 1987 University of Washington, Seattle, WA
(Fisheries) **G.P.A. 3.5**; *Honors: National Deans List Recognition, 1987*

WORK HISTORY:

July, 1997 Washington Department of Fish and Wildlife, Dayton, WA
to present **Fish Biologist III** - Responsible for identifying, designing, conducting,
analyzing, interpreting, and reporting appropriate research for Lower Snake River
Compensation Plan (LSRCP) for spring chinook mitigation in southeast Washington.
Relate findings to LSRCP and fish management needs in area rivers. Performs as the
WDFW spring chinook specialist for the LSRCP program.

June, 1993 to Washington Department of Fish and Wildlife, Dayton, WA
July, 1997 **Fish Biologist II** - Takes primary responsibility for the
organization, writing, and data analysis for annual Tucannon spring chinook salmon
report. Performs routine professional biological work related to salmon production at
Lyons Ferry and Tucannon Hatcheries. Leads and/or assists in developing proposals,
study plans, and designs for hatchery evaluation research.

May, 1988 to Washington Department of Fisheries, Statewide Locations, WA

September, 1990 **Scientific Technician II** - Responsible for the collection of tissue samples, coded wire tags, and scales from fisheries, and statewide stocks of salmon for GSI program; conducted creel surveys for groundfish and sport salmon fisheries.

February, 1988 to Idaho Department of Fish and Game, Lewiston, ID
May, 1988 **Biological Aide** - Assisted in the operation, maintenance, and data summary of two smolt monitoring traps.

1986-87, 1991-92 Fisheries Research Institute, Alaska Research Stations, AK
(Summers Only) **Research Assistant** - Assisted in Alaskan sockeye salmon research; spawning ground surveys, juvenile fish sampling, adult tagging, hydrology, and limnology work. Boat camp maintenance.

PROFESSIONAL AFFILIATIONS: American Fisheries Society

Richard E Rubenser
PO Box 325
Starbuck, WA 99359
509-399-2287

Education:

- Washington State University. 1956-60 B.A. Agriculture Economics
- United State Army. 1961-63
- Washington State University 1965 Post Graduate Studies
- Walla Walla Community college 1997 Spanish
- Many Professional Seminars
 - First Aid
 - Chemical/Pesticide License
 - Etc...

Career:

- 1997- Ranch Owner and Manager F&R Farms
Excavating and River Work
Starbuck Country Bed & Breakfast
- 1966-68 Manager of Carnation Albers Feed Company in Chehalis
- 1961-63 United States Army
- 1956-60 WSU Student

Other Activities:

- President of Farm Bureau Pheasants Forever

- Columbia County Fire Commissioner
 - Port of Columbia Commissioner
 - Volunteer Fireman
 - President of Cattleman's
 - Vice-President of Columbia County Fair
 - School Board Member
 - Sportsman Organization
- WSU Alumni
 - Wrestling Coach Dayton High
 - Basketball Official
 - AAU Basketball Coach
 - Wrestling Official
 - Outstanding Farmer of the Year
 - Cattleman of the Year

My family and I have lived in the Tucannon River Valley all our lives. We have been involved in many conservation projects. I have built several fish habitat projects. I have also designed and built some flood control and fish habitat projects on my own. We are very interested in trying to make the streams of the area better for fish and wildlife. I have been very observant of the pheasants, deer, salmon, steelhead, bull trout and other species of fish and wildlife making their home in or by the Tucannon River for over fifty years.

Kim Eugene Lyonnais

114 South Second
 Dayton, WA 99328
 (509)382-4676 (W) (509)382-2312 (H)

Objective: Personal information for:
 Terry Bruegman, District Coordinator, Columbia Conservation District

Professional Experience

- Union Carpenter** 1979 to 1980
 Spokane, WA
 Field Foreman
- Columbia County** February 18, 1986 to Present
 341 E. Main, Dayton, WA 99328
 Planning Director

Education

- North Central High School** 1966 to 1970
 Spokane, WA
 High School Diploma
- Spokane Community College** 1980 to 1983
 Spokane, WA
 AA Business Degree

Eastern Washington University **1983 to 1985**
Cheney, WA
Bachelor of Arts Degree, Urban & Regional Planning
Minor in History

International Conference of Building Inspectors Certification, 1996

Skip Mead
Columbia Conservation District Chairman of the Board

Education: Bachelor of Science degree in Agriculture, Washington State University, 1979.

Current Occupation: Landowner/Operator Production Agriculture Enterprise

Current Associations:

- Chairman, Columbia Conservation District
- Tucannon Model Watershed Landowner Steering Committee
- 14 years as Supervisor on Columbia Conservation District Board
- Washington Association of Conservation District SE Area Director

Background: Third generation dryland wheat and cattle producer and landowner along and in the Tucannon River Watershed. An active participant in a very progressive and proactive conservation district and active with an incredibly capable group of landowners from Columbia County, Washington.

Type here (provide answers in paragraph form)

Section 10. Information/technology transfer

How will technology or technical information obtained from the project be distributed or otherwise implemented? Methods can include publication, holding of workshops, incorporation in agency standards or facilities, and commercialization.

The District works closely with area news media to promote holistic resource management from a watershed prospective. Articles about the Tucannon River Model Watershed projects have appeared in regional newspapers, as well as, BPA's Circuit and the Journal. Presentations at Neighborhood meetings, before commodity groups, at public meetings, and before Legislators has created great interest in the success of a "bottom up" effort for salmonid habitat restoration. Formal and informal tours of the projects have included, students, landowners, agency personnel, and Legislators. The success of the Tucannon Model Watershed is reflected in the level of trust established between landowners and resource agencies and has created interest nationally as evidence by the number of national level agency personnel visiting the project sites. Bio-engineering technology used in the Tucannon River was the bases for a very successful effort by a local group of FFA

members who place 3rd in the National FFA Current Issues Contest and thus reaching hundreds of young resource oriented students. The Tucannon River Model Watershed process will be the bases for the Touchet River Watershed Plan effort in 1998.

Congratulations!

Thank you for completing the FY99 Proposal Form. Please print and save this file to diskette, and mail both to the address shown at the top of this document. To ensure a thorough review of your proposed work, this form will be screened for completeness. If it is not complete, it may be returned to you with a request for additional information.